Supporting Underrepresented STudents Adapting to Change: Summer Program to Accelerate Regenerative Medicine Knowledge (SUSTAIN a SPARK)

Grant Award Details

Supporting Underrepresented STudents Adapting to Change: Summer Program to Accelerate Regenerative Medicine Knowledge (SUSTAIN a SPARK)

Grant Type: SPARK

Grant Number: EDUC3-13114

Project Objective: This SPARK program provides 8-week summer research internships for high school students in stem cell biology and regenerative therapeutics at UCSF Benioff Children's Hospital Oakland (BCH-Oakland). Students, who will be recruited from diverse backgrounds, will receive mentoring, attend regular seminars, presentations, and discussions intended to impart a strong foundation in the scientific method, participate in career development workshops, and present their research findings in a public scientific forum. At the conclusion of their eight week internships, students will present their research in a culminating SPARK conference.

Investigator:

Name:	Ellen Fung
Institution:	UCSF Benioff Children's Hospital Oakland
Type:	PI

Award Value: $255,750

Status: Pre-Active

Grant Application Details

Application Title: Supporting Underrepresented STudents Adapting to Change: Summer Program to Accelerate Regenerative Medicine Knowledge (SUSTAIN a SPARK)

Public Abstract:

UCSF Benioff Children's Hospital Oakland (BCH-Oakland) is a non-profit hospital affiliated with UCSF but located in Oakland, CA in one of the most socially and ethnically diverse areas of the country. Since 1981, the Summer Student Research Program (SSRP) at BCH-Oakland has provided research training to over 1000 high school and undergraduate students from groups who are underrepresented in the STEM workforce. Our curriculum provides hands-on immersion into working laboratories, structured activities designed to stimulate interest in science, and support to pursue careers in biomedical research. The long-term goal of the program is to increase the diversity of bioscience researchers.

The SSRP was awarded both the previous CIRM Creativity and SPARK Awards and it has been very successful – 100% of our CIRM alumni who have matriculated to college with declared majors have chosen to study in STEM fields. With continued funding from CIRM, the proposed SPARK program seeks to enroll 6 new high school students each year for the next five years. Participants funded by CIRM will be part of the larger internship program that typically hosts between 35 to 45 students. SPARK trainees will conduct their own research under the mentorship of an accomplished investigator; attend regular seminars, presentations, and discussions intended to impart a strong foundation in the scientific method; participate in career development workshops; and present their research findings in a public scientific forum.

SPARK interns will focus on stem cell biology and regenerative therapeutics. Our hospital has a rich history of pioneering stem cell therapies for blood diseases, while our strong relationship with the UC Berkeley Stem Cell Center will allow for novel opportunities with CRISPR innovations and bioengineering breakthroughs. Additionally, SPARK students will participate in structured patient engagement activities, as well as workshops and presentations unique to stem-cell research. In this request for continued funding, we will build on the foundations that supported the longevity of our program, while also incorporating new training approaches for hybrid in-person and distance learning. Our curriculum has many additions, including an online curriculum management, new investments in equity and inclusion training for both faculty and students, collaborations with other SPARK-funded institutions, and more comprehensive career development.

Students that complete our program will have the tools to compete more effectively in the workforce, and will add to the gender, racial and cultural diversity that is needed in the growing biomedical sector of regenerative medicine. We have the experience, infrastructure, connections, proven results, and dedicated faculty to make this program valuable to the students and a worthwhile investment for the citizens of California.

Statement of Benefit to California:

In November 2020, California voters again approved a proposition to support California Stem Cell Research. The ballot measure provides roughly $5.5 billion in bond funding to the California Institute for Regenerative Medicine (CIRM) to 'support stem cell and regenerative medicine research in California…in order to bring stem cell and regenerative therapies to all people of this great state, particularly for communities that have traditionally been overlooked or underserved." All citizens of California directly benefit from medical advancements that come from CIRM, but also from the scientific contributions by individuals who represent the full diversity of the state. To that point, there is abundant evidence that individuals from minority groups and lower-income backgrounds are grossly underrepresented in the health sciences and in biomedical research. The reasons for this phenomenon are complex, but are rooted in the lack of opportunities for research for under-represented students during the high school years. The result is a relative lack of perspectives and backgrounds among the professionals conducting the research, and a national research agenda that does not adequately consider all populations. The Summer Student Research Program (SSRP) at UCSF Benioff Children's Hospital Oakland aims to address the lack of diversity in science by providing a welcoming environment for high school students from underrepresented populations to pursue careers in biomedical research. Support from CIRM through the current SPARK initiative will ultimately result in more individuals from all backgrounds to contribute to stem cell science and translational therapies, for patients in California and around the World who have unmet medical needs.

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